

IN THE CLAIMS

Please amend the claims as follows:

1. (currently amended) A method comprising:
determining a characteristic parameter describing line-of-sight conditions of a radio propagation environment of ~~at least two base stations~~a base station in a mobile telecommunications system, wherein a characteristic parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels;
measuring at least one feature of a signal transmitted between a mobile station and the ~~base station~~at least two base stations, ~~said~~the feature being such that it can be used for determination of ~~a distance~~distances between the mobile station and the ~~base station~~at least two base stations; and
computing the ~~distance~~distances between the mobile station and the ~~base station~~at least two base stations using ~~said~~the measured signal feature and the characteristic parameter describing the line-of-sight conditions of the ~~base station~~at least two base stations; and
determining a current geographical location of the mobile station based on the determined distances between the mobile station and the at least two base stations.
2. (canceled)
3. (canceled)
4. (canceled)
5. (currently amended) A method according to claim 1, wherein ~~said~~the at least one feature comprises at least travel time of the signal between the mobile station and the ~~base station~~at least two base stations.
6. (currently amended) A method according to claim 3, wherein ~~said~~the at least one feature comprises at least signal travel time differences between the mobile station and the ~~base station~~at least two base stations.

7. (currently amended) A method according to claim 1, wherein ~~said~~the at least one feature comprises at least strength of the signal transmitted between the mobile station and the ~~base station~~at least two base stations .
8. (currently amended) A method according to claim 1, wherein ~~said~~the at least one feature comprises quality of the signal ~~transmitted between the mobile station and the base station.~~
9. (currently amended) A method according to claim 1, comprising use of a weighted least square method for determination of distances between the ~~base station~~at least two base stations and the mobile station, wherein the used weighting matrix is the inverse of an error covariance matrix.
10. (previously presented) A method according to claim 1, comprising:
defining radio propagation environments for several stations; and
classifying the stations in different radio propagation environment classes;
wherein the characteristic parameter is based on the class of the station.
11. (previously presented) A method according to claim 1, wherein the data for the characteristic parameter is stored and processed in a location service node implemented in the mobile telecommunications system.
12. (canceled)
13. (currently amended) A method according to claim 1, wherein ~~said~~the determining the characteristic parameter comprises:
determining the current geographical location of ~~said~~the mobile station in a way that is external to the telecommunications system; and
inputting the results of the determination to the mobile telecommunications system.

14. (currently amended) A method according to claim 13, comprising use of a satellite based positioning system for ~~said the~~ determining the current geographical location of the mobile station.

15. (currently amended) Apparatus, comprising:

storage device for storing a characteristic parameter describing line-of-sight conditions of a radio propagation environment of ~~a base station~~ at least two base stations,

wherein the characteristic parameter describes excess path lengths caused by obstacles in the radio propagation environment by means of one of a number of discrete levels;

measurement device for measuring a feature of a signal transmitted between the mobile station and the ~~base station~~ at least two base stations for determination of a ~~distance~~ distances between the mobile station and the ~~base station~~ at least two base stations; and

a controller for receiving an outcome of ~~said the~~ measuring for defining the ~~distance~~ distances between the mobile station and the ~~base station~~ at least two base stations based on the outcome of ~~said the~~ measuring and ~~said the~~ characteristic parameter, and for determining a current geographical location of the mobile station based on the determined distances between the mobile station and the at least two base stations.

16. (canceled)

17. (canceled)

18. (canceled)

19. (previously presented) The apparatus according to claim 15, wherein different radio propagation environments of different stations are classified in different radio propagation environment classes and the characteristic parameter is based on the class of the station.

20. (currently amended) The apparatus according to claim 15, wherein the feature of the signal is based on one or several of the following: travel time of the signal between the mobile station and the ~~base station~~ at least two base stations, signal travel time difference between the mobile station and the ~~base station~~ at least two base stations, the strength of the signal, the quality of the signal.

21. (canceled)

22. (previously presented) The apparatus according to claim 21, wherein the mobile station comprises a sector antenna.

23. (currently amended) A location server for use in a telecommunications system for provision of location data of a mobile station having a radio connection with ~~at least one base station~~ at least two base stations of the telecommunications system, comprising:

means for receiving measurement data from the telecommunications system concerning a feature of the connection between the mobile station and ~~said the at least one base station~~ at least two base stations for determination of ~~the distance~~ distances between the mobile station and the ~~base station~~ at least two base stations;

storage means for storing a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of ~~said the at least one base station~~ at least two base stations, wherein the characteristic parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels;

control means for defining the ~~distance~~ distances between the mobile station and ~~said the at least one base station~~ at least two base stations on the basis of the received measurement data and ~~said the~~ characteristic parameter and for determining a current geographical location of the mobile station based on the determined distances between the mobile station and the at least two base stations.

24. (currently amended) An arrangement, comprising:

a first station in a telecommunications system;

a second station for communicating by radio with the first station in the telecommunications system;

~~said~~the arrangement configured to define a current geographical location of the first station with a source of location information that is external to the telecommunications system, to determine a feature of a radio signal received by one of the stations from other stations, and to calculate a parameter describing line-of-sight conditions of a radio propagation environment according to the current geographical location of the first station and the ~~said~~-determined feature, wherein the parameter describes excess path lengths caused by obstacles in the environment with one of a number of discrete levels.

25. (previously presented) An arrangement according to claim 24, configured to receive signals from a satellite based positioning system.

26. (previously presented) An arrangement according to claim 24, configured to determine if an update of the data concerning the radio propagation environment is required.

27. (previously presented) An arrangement according to claim 24, wherein the first station comprises a portable device.

28. (new) A method according to claim 1, wherein the signal is transmitted from the at least two base stations to the mobile station and the signal is measured at the mobile station.

29. (new) A method according to claim 1, wherein the signal is transmitted from the mobile station to the at least two base stations and the signal is measured at the at least two base stations.

30. (new) An arrangement according to claim 15, wherein the signal is transmitted from the at least two base stations to the mobile station and the signal is measured at the mobile station.

31. (new) An arrangement according to claim 15, wherein the signal is transmitted from the mobile station to the at least two base stations and the signal is measured at the at least two base stations.